

Art  
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application of the device to a structural member.

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### REMARKS

In this response to the first Office Action in the application, Claims 7, 9, 12, and 17 have been amended by rewriting, no claims have been added, and no claims have been cancelled (except by rewriting of the previous version). Claims 1 through 25 remain pending in the application. A marked-up version of the rewritten claims, showing all changes, accompanies this amendment as a separate document.

The Examiner rejected Claims 1 - 6 and 21 - 25 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,778,334, to Sturgeon. The rejection under 35 U.S.C. 102(b) is respectfully traversed.

The Examiner commented with regard to Claim 1 that Sturgeon teaches a composite material comprising high modulus organic fiber layers alternating with inorganic fiber layers in a resin matrix. The Examiner stated that the organic fiber layers of Sturgeon can be Applicants' "first elongate generally planar ply" and "second elongate generally planar ply" (elements of Applicants' Claim 1), and that the inorganic fiber layers disclosed by Sturgeon comprise metal fibers such as steel. The Examiner noted that steel is known to be ferrous and thus magnetically detectable. The Examiner then stated that the inorganic fiber layers disclosed by Sturgeon can be Applicants' "elongate generally planar detectable ply" (an element of Claim 1). The Examiner commented that Sturgeon does not specify a specific amount, or number, of layers, but only that the layers are alternating between high modulus organic fiber layers with inorganic fiber layers. The Examiner stated that such is the desired organization of the layers of the composite material of the invention.

Sturgeon discloses and teaches the use of a combination of, specifically, organic and inorganic fibers in a resin matrix for the purpose of substantially enhancing the strength of the resulting composite material. The use of an organic fiber component in combination with an inorganic fiber component is an essential element or aspect of the Sturgeon disclosure, and a composite material without the organic fiber component is neither disclosed nor contemplated by the Sturgeon patent. Sturgeon very clearly teaches away from a composite material that does not include both high modulus organic fibers and inorganic fibers, each comprising at least fifteen percent of the composite volume. The fibrous nature of both the organic and the inorganic components is an essential aspect of the Sturgeon disclosure and teaching. Even though Sturgeon discloses that the reinforcing components may be in the form of, e.g., fabrics or tapes, it is very clear from the disclosure that the fibrous nature of the material is an overriding consideration, and that the fabrics or tapes are of fibrous material. Although Sturgeon discloses that short, single crystal particles can be used, Sturgeon teaches in the same sentence that such particles must be in the form of “whiskers” and must have a minimum length to maximum width ratio of about 10:1. Sturgeon characterizes such particles as being “fibrous elements”.

Applicants’ claims, in contrast to the Sturgeon teaching, encompass a composite with no organic fiber component. Applicants’ disclose the use of inorganic high tensile strength materials, such as fiberglass or carbon/graphite, to form the first and second plies as recited in, e.g., Claim 1. Applicants’ claims do not recite any limitations regarding the organic or inorganic nature of the high tensile strength materials, and Applicants’ claims should be broadly construed for purposes of examination, and thus must be read, consistent with the specification, to include a composite structure with no organic fiber component. Because the inclusion of organic fibers is taught by Sturgeon to be essential, Sturgeon clearly cannot anticipate the structure claimed by

Applicants. Specifically, Sturgeon does not anticipate Claim 1 or Claim 21, or any claims dependent under either of them.

Sturgeon teaches that the distribution of organic fibers and inorganic fibers in the disclosed composite material is substantially uniform (e.g., column 2, lines 47 - 63). Sturgeon specifically defines “uniformly distributed throughout the composite” to mean that both the inorganic and organic fibers are present in the central and the outer portions of the composite (column 2, lines 60 - 63). The only other distribution of fibers mentioned by Sturgeon is one in which the inorganic fiber component is located on the “compressive side of the flexural bar”.

The Examiner has taken the position that the organic fibers of the Sturgeon composite can be the “first elongate generally planar ply” and the “second elongate generally planar ply”, and that the inorganic fibers of the Sturgeon composite can be the “elongate generally planar detectable ply” of Applicants’ Claim 1. Although, as discussed above, Applicants believe that the characterization of the nature of Applicants’ first and second plies is incorrect, the Examiner’s characterization of Claim 1 would encompass a structure in which the fibers comprising the first and second plies and the fibers comprising the detectable ply are stringently segregated rather than being substantially uniformly distributed through the composite as taught by Sturgeon. To the extent that Sturgeon can be read as disclosing alternating layers, the Sturgeon teaching necessarily requires a multiplicity of layers in order to achieve substantially uniform distribution. Claim 1 encompasses a three ply structure with a non-uniform distribution, directly contrary to the teachings of the Sturgeon patent.

Sturgeon does not teach, or make any reference whatsoever, to magnetic detectability, or, more generally, to detectability of any nature. Sturgeon makes a parenthetical reference to the use of steel piano wire as one of the types of inorganic fibers that may be used in the Sturgeon

composite, among a listing including many other types of inorganic fibers. Sturgeon's lack of concern with magnetic detectability is demonstrated not only by the complete absence of any mention of that property, but also by the inclusion of a single reference to steel and by the teaching of the use of non-detectable inorganic fiber materials in all examples contained in the specification. The bare mention by Sturgeon of "steel piano wire" does not constitute a teaching of magnetic detectability. Rather it is only a teaching that fibers of metal (e.g., steel piano wire) can be used in the context of the Sturgeon disclosure to help impart an unexpected strength to a composite material.

The Examiner stated in her comments that "steel is known to be ferrous [and] thus magnetically detectable." Applicants respectfully assert that the Examiner's statement is incorrect, in that steel is not inherently magnetically detectable even though it does include a ferrous component. The term "steel" refers to an alloy of iron and other non-magnetically detectable elements. It is well known that although steel may be magnetically detectable, many types of steel, especially stainless steel alloys including, e.g., chromium and nickel, are not magnetically detectable. The steel from which piano wire is formed typically includes significant proportions of chromium and/or nickel, and is often not a magnetically detectable metal. Therefore, although it is possible that some steel piano wire can be magnetically detected, magnetic detectability is not a necessary or inherent characteristic of that material. Applicants assert that the mere possibility that a characteristic might result from a very specific and particular set of circumstances under the Sturgeon teaching does not establish that the characteristic is inherently disclosed by that reference. Magnetic detectability is not an inherent characteristic of the Sturgeon composite material or of any disclosed component for that composite material, and there is nothing in the Sturgeon disclosure to lead a person of ordinary

skill to perceive that it teaches magnetic detectability. It is only from the perspective of, and with the benefit of, the present application that the one would be lead to even consider the Sturgeon disclosure in terms of “magnetic detectability”, and even then the connection is remote. Accordingly, Sturgeon cannot be properly taken to include a teaching of the use of “magnetically detectable material” or “magnetic detection means”, and does not anticipate Claim 1 or Claim 21.

Further, neither the “magnetically detectable material” element of Claim 1 nor the “magnetic detection means” of Claim 21 is limited to a metallic material. As stated in the specification of the present application (page 8, lines 8 - 10), any material that disrupts or influences magnetic fields may be used, and the limitation of “metallic” or “ferrous” should not be read into Applicants’ claims when it is not specifically recited. Neither Claim 1 nor Claim 21 recites that limitation.

With regard to Claim 2, which is dependent under Claim 1 and recites the additional limitation that the detectable ply of Claim 1 comprises an open mesh formed of a ferrous material, the Examiner stated that Sturgeon teaches the use of a woven fabric or “mesh” of steel wires. Although Applicants believe that Claim 1 has been shown to be allowable over Sturgeon and that Claim 2, which adds additional limitations to Claim 1, is therefore allowable, Applicants also disagree that Sturgeon teaches the use of an “open mesh”. Applicants further disagree that Sturgeon teaches the use of steel wires in any woven fabric form. Sturgeon makes no disclosure regarding an “open mesh”. An open mesh need not be woven, and a disclosure of a woven fabric structure is not equivalent to a disclosure of an open mesh structure. There is no specific disclosure in Sturgeon regarding the use of steel wires, or any other metallic fiber, in a woven form. Sturgeon teaches the use of a wide variety of inorganic fiber materials, and it does not

follow from the Sturgeon teaching that all structural forms are suitable for all disclosed materials.

With regard to Claim 3, the Examiner stated that Sturgeon teaches that the magnetically detectable ply of steel wires can be made of a cloth or “sheet”. Claim 3, which is dependent under Claim 1, recites that the detectable ply of Claim 1 comprises a “thin sheet of ferrous metal”. Sturgeon does not teach that the inorganic fibrous component can be in the form of a “sheet”. “Cloth” or fabric is not equivalent to “sheet”, especially in the context of metallic sheets. The only mention in the Sturgeon patent of a “ferrous” metal is a reference to “steel piano wire”, which is clearly not a “sheet of ferrous metal”. Further, a sheet of ferrous metal is not fibrous, so Sturgeon must be taken as actually precluding the use of a thin sheet of ferrous metal, as recited in Claim 3. In any event, Applicants suggest that they have shown Claim 1 to be allowable over Sturgeon, and that Claim 3, which further limits the structure of Claim 1, is therefore allowable.

With regard to Claim 4, the Examiner commented that Sturgeon teaches that the magnetically detectable ply of steel wires can be made of a scrim cloth, which is a loosely woven article which has many voids or “perforations”. Claim 4, which is dependent under Claim 3 (and thus under Claim 1), recites that the thin sheet of ferrous metal of Claim 3 is penetrated by a plurality of perforations. As noted above, Sturgeon does not teach the use of a ferrous metal in any form other than a wire, and Sturgeon does not teach that steel wires can be used in the form of a scrim cloth. Sturgeon discloses only that the fibrous reinforcing materials, of which there are many disclosed, may take various forms. That does not constitute a teaching that all of the disclosed materials may be used in all of the disclosed forms. Further, the “voids” of a scrim cloth are not “perforations”, in the ordinary and common meaning of that term. A perforation is

formed in a material by penetration, as by boring or punching, and not by loosely weaving or knitting. Still further, as Applicants have argued with respect to Claim 3, Claim 4 is dependent under a base claim that Applicants believe they have shown to be allowable, and Claim 4 is therefore allowable.

The Examiner stated with respect to Claim 5 that Sturgeon teaches that the magnetically detectable ply of steel wires can be in the form of side-by-side unidirectionally-oriented layers of fabric or tape, or “thin narrow bands”. Claim 5, which is dependent under Claim 1, recites that the detectable ply comprises a plurality of thin narrow bands of ferrous metal disposed in spaced relation between the first and second plies. As pointed out above, Sturgeon does not teach that the steel wires can be used in the form of fabric or tape. Further, as noted by the Examiner, Sturgeon teaches “layering”, and Sturgeon also teaches “substantially uniform distribution” throughout the composite. Claim 5 recites the use of metal bands, in spaced apart relation, between two other plies. In the full context of the Sturgeon disclosure, “side-by-side” is a teaching of a closely proximate placement, whereas Applicants’ Claim 5 recites “spaced apart” rather than “side-by-side”. As with the other dependent claims discussed above, Claim 5 is dependent under a base claim that Applicants believe they have demonstrated to be allowable, and Claim 5 is therefore allowable.

With regard to Claim 6, the Examiner stated that Sturgeon teaches that the magnetically detectable ply of steel wires can be in the form of single crystal particles or fibrous elements such as whiskers. Claim 6, a dependent claim under Claim 1, recites that the detectable ply comprises a multiplicity of discrete particles of magnetically detectable material disposed between the first and second plies. Sturgeon does not teach that steel wire can be used in the form of single crystal particles or whiskers. As Applicants have pointed out previously,

Sturgeon discloses a number of types of inorganic materials that can be used and a number of forms in which inorganic materials can be used, but Sturgeon does not teach the use of steel wire in the form of single crystal particles or whiskers. Indeed, those forms are inconsistent with the Sturgeon disclosure of the use of a ferrous metal in the form of steel piano wire. Piano wire is not a single crystal particle, nor is it a whisker as that term is recognized and used by Sturgeon. The disclosure of a number of materials and a number of forms does not, alone, teach the use of all the materials all of the forms or the use of any particular material in any particular form. Further, Applicants believe Claim 6 to be allowable as a dependent claim that further limits an allowable base claim.

As to Claims 21 - 25, the Examiner stated that the features of the Sturgeon patent are as set forth in the Examiner's discussion of Claims 1 - 6. Claim 21 is an independent claim, and Claims 22 - 25 are all dependent under Claim 21. Applicants' arguments demonstrating that Sturgeon does not anticipate Claim 1 are also applicable to Claim 21, and Applicants continue to assert those arguments with regard to Claims 21 - 25.

Claim 21 recites a continuous elongate body formed of a high tensile strength material impregnated with a curable resin, and magnetic detection means formed of magnetically detectable material interconnected to the body. In addition to the arguments set forth above, Applicants would note that Sturgeon teaches a composite formed and cured as a monolithic structure with resin and reinforcing fibers substantially uniformly distributed through it, whereas Claim 21 separately recites a magnetic detection means interconnected to a body impregnated with a curable resin. The structure of the composite of Claim 21 can be significantly different from the structure of the composite taught by Sturgeon, and, accordingly, Claim 21 is not anticipated by Sturgeon.



Claim 22 recites that the magnetic detection means comprises a multiplicity of particles of magnetic material attached to at least one of the faces of the body. In addition to the arguments made above, Applicants assert that the attachment of magnetic material, or, indeed, of any material, to a face or faces of a composite is directly contrary to the Sturgeon teaching. Sturgeon teaches that the strength of the composite, which is the basis of the Sturgeon patent, is achieved by uniformly distributing the reinforcing fibers through the composite; i.e., through the resin matrix. Claim 22, in which one of the claimed elements is attached to the face of the body impregnated by resin, recites a significantly different structure and is clearly not anticipated by Sturgeon.

Claim 23 recites that the magnetic detection means comprises a multiplicity of particles of magnetic material embedded within the body. As discussed above, Sturgeon does not disclose or teach the use of a magnetic material at all, much less the use of particles of magnetic material. Sturgeon further does not teach the “embedding” of particles in a body in a manner consistent with Claim 23. Claim 24 recites that the magnetic detection means comprises fibers of magnetically detectable material intermixed with the high tensile strength material. A composite made in accordance with Sturgeon, and in which steel piano wire is used as a reinforcing fiber, does not necessarily provide the feature of magnetic detectability to the Sturgeon composite material. The mere possibility that magnetic detectability might be serendipitously present in some composites within the scope of the Sturgeon patent does not establish that magnetic detectability is an inherent feature of Sturgeon nor does it inject that feature into the teaching of the Sturgeon patent. Since Sturgeon does not include any direct disclosure or teaching of magnetic detectability, and since magnetic detectability is clearly not a necessary or inherent result of the Sturgeon teaching, Sturgeon cannot properly be deemed to anticipate these claims,

or, indeed, any of the claims of the present application.

Claim 25 recites a composite in which a separate ply of magnetically detectable material is bonded to at least one of the faces of the body. In addition to the other reasons stated above, this claimed structure cannot be anticipated by Sturgeon because it is contrary to the Sturgeon requirement of uniform distribution.

The Examiner rejected Claims 7 - 20 under 35 U.S.C. 103(a) as being unpatentable over Sturgeon in view of U.S. Patent No. 4,081,303, to Drosthholm et al. The rejection of Claims 7, 8, 10 - 16, and 18 - 20 under 35 U.S.C. 103(a) upon the grounds stated by the Examiner is respectfully traversed. Claims 7, 9, 12, and 17 have been amended, and the patentability of those claims as amended is discussed below.

The Examiner stated that Sturgeon fails to teach that the composite structural reinforcement device comprises an interlock means comprising a multiplicity of serrations formed on the upper face and the lower face of the body in a generally perpendicular relation to the longitudinal axes of the plies for the purpose of forming a mechanical interlock during the application of the device to a structural member. The Examiner further commented that Sturgeon fails to teach that the composite structure reinforcement device includes an alignment means comprising a longitudinal groove extending into the body from one of the faces, and a matching longitudinal projection extending outwardly from the other of the faces, so that the projection is received in the groove as the device is applied in overlapping layers to a structural member.

With regard to the Drosthholm et al. patent, the Examiner stated that Drosthholm et al. teaches the production of tubular elements such as pipes, and that one embodiment suggests introducing a lining to be applied to a mandrel by helically winding the metal foil strip with

overlapping or abutting edges. The Examiner stated that the adjacent edges may be secured by complimentary deforming the lining to provide a mechanical interlock. The Examiner stated that Figure 17 of Drosthalm et al. shows a dovetail groove, which has serrated edges as required by Claims 7 and 8. The Examiner commented that “in the complimentary deforming of the lining to provide a mechanical interlock in the instance of Figure 17, one part of the lining would have an edge with serrations and the adjacent edge would have an edge with serrations complimenting the opposing edge.” The Examiner also stated that Figure 18 shows simple straight sided grooves, which would provide an alignment means as required by Claims 9 and 10. The Examiner commented that “in the complimentary deforming of the lining to provide a mechanical interlock in the instance of Figure 18, one part of the lining would have an edge with a projecting longitudinal groove and the adjacent edge would have a complimentary recessed longitudinal groove.”

The Examiner stated that it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a mechanical interlock comprising a multiplicity of serrations formed on upper and lower face in a generally perpendicular relation to longitudinal axes of the plies, as suggested by Drosthalm et al., in the laminate of Sturgeon, motivated by the desire to anchor a material having poor bondability creating minimal system stresses. The Examiner further stated that it would have been obvious to one of ordinary skill in the art at the time the invention was made to form an alignment means comprising a longitudinal groove extending into a face and a matching longitudinal projection extending outwardly from another face, as suggested by Drosthalm et al., in the laminate of Sturgeon, motivated by the desire to properly position the laminate while making it easily removable. The Examiner next stated that, as to Claims 11 - 16 and 18 - 20, the features of the patents are set forth above (in the Examiner’s

comments).

In the present application, Claims 7 - 11 are dependent under Claim 1, either directly or through one or more intervening claims dependent under Claim 1. Accordingly, Claims 7 - 11 include all of the limitations of Claim 1, as well as additional limitations recited in any intervening claims. Applicants continue to rely upon all arguments made above with regard to the allowability of Claim 1, and of claims dependent under Claim 1, over the Sturgeon reference.

Claim 7 is directly dependent under Claim 1, and recites the additional element of interlock means formed on the upper face and the lower face of the body for the purpose of forming a mechanical interlock between the faces during application of the device to a structural member. As stated in the preamble to Claim 1, the device is applied to a structural member in a plurality of overlying layers. Claims 12 and 17 are independent claims, and, similarly to Claim 1, each includes in its preamble the statement that the claimed device is to be applied to a structural member in a plurality of overlying layers. Claims 13 - 16 are dependent under Claim 12, and Claims 16 - 20 are dependent under Claim 17, so each of the dependent claims incorporates the same preamble description regarding the manner of use of the claimed device.

Before discussing the Drosthholm, et al. reference, per se, Applicants assert that there is no appropriate basis for combining the Sturgeon patent with the Drosthholm patent. As clearly taught by Sturgeon, the Sturgeon composite material is a rigid material, and Sturgeon emphasizes the flexural strength of the composite and its resistance to deformation. It is clear that uses for the composite disclosed by Sturgeon would not be perceived by those of ordinary skill in the art to include application of an elongate body of the Sturgeon composite to a structural member in overlying layers. Accordingly, there is no suggestion or teaching in Sturgeon to lead toward the inclusion of interlock and/or alignment means to interlock or align

the faces of a single composite body during the wrapping of the composite in layers on a structural member. Quite the contrary, one of ordinary skill in the art would be lead by the Sturgeon teaching to reject the Sturgeon composite for such a use, and thus would be taught away from forming alignment and/or interlock means on the faces of the sturgeon composite material.

The Drosthholm et al. patent is primarily directed to a making tubular resin elements such as pipes, but the reference does disclose certain mechanical interlock means. The Examiner is believed to be correct in her characterization to the extent that Figures 17 and 18 provide two examples of interlock means. However, neither of those interlock means provide or perform the function of forming a mechanical interlock between faces of a body applied to a structural member. Drosthholm et al. clearly teaches that the interlock means function solely to form an interlock between a tape and a subsequently applied liquid thermosetting resin, and is therefore present only in the internal structure of the resulting tubular element. The interlock taught by Drosthholm et al. is permanent once the liquid resin has cured, and thus becomes an integral part of the internal structure rather than an external element on the upper and lower faces of the body of the device claimed by Applicants. As directly stated in the Drosthholm et al. patent in reference to the dovetail groove of Figure 17, “when a strip of this type is wound upon the mandrel, and the liquid thermosetting laminate resin is subsequently applied, the liquid resin material will enter the dovetail groove 73 and when the thermosetting resin is cured and hardened, this provides a secure mechanical interlock ....” Drosthholm et al. further states that “FIG. 18 provides an alternative mechanical interlocking system in which straight sided grooves are provided in the lining layer 75 regardless of whether these grooves are provided in the preformed tape or in a lining layer fused in situ on the mandrel.” It is clear from the Drosthholm

et al. disclosure that the grooves extend longitudinally along the strip or tape. The longitudinal orientation is shown in Figures 17 and 18 (which are cross-sectional views across the width of the strip or tape and of the grooves, and also show abutting edges of the strip in which they are formed). It is also evident that such grooves could only be longitudinal if formed in situ on a rotating mandrel as taught by Drosthholm et al. Even if the grooves disclosed by Drosthholm et al. could be taken to be “serrations”, a position with which Applicants do not agree, the grooves do not interact and cannot function to form a mechanical interlock between upper and lower faces of the same body. Drosthholm et al. does not teach, and actually precludes, the mechanical interlock claimed by Applicants. Applicants’ claimed mechanical interlock, which they have shown to be patentably distinct from any disclosure or teaching of Drosthholm, et al., is an element of Claims 7, 8, 12 - 16, and 19, and Applicants assert that those claims are patentable over Sturgeon, Drosthholm et al., or any combination of them.

Applicants have amended Claims 7 and 12 to clearly claim the interlock means feature of resisting longitudinal movement of the upper and lower faces of Applicants’ device relative to each other. The amendment is clearly supported by Applicants’ original specification (e.g., at page 10, lines 5 - 8). This feature is not taught by Drosthholm et al., and none of the structures disclosed by Drosthholm et al. can interact in a manner consistent with the Drosthholm et al. disclosure to provide that feature. Claim 8 is dependent under Claim 7, and Claims 13 - 16 are dependent under Claim 12, so the claimed feature added to Claims 7 and 12 is reflected in the dependent claims as well and further distinguishes those claims from Drosthholm et al.

Relating to the alignment means that are an element of Applicants’ Claims 9 - 11, 14 and 15 (in combination with the interlock means discussed above), 17, 18, 19 (in combination with the interlock means), and 20. Drosthholm et al. teaches that the disclosed tapes, bands, or the like

are wound helically, with the edges of the bands abutting or slightly overlapping. Figure 16 of Drosthalm et al. shows a structure for connecting overlapping edges, in which a portion of the tape or band at one edge is received in a groove in the opposite edge of the tape or band. As taught by Drosthalm et al., the groove extends into the tape from one of the faces, adjacent to the edge of the tape. Drosthalm et al. does not, however, disclose a projection extending outwardly from either face of the tape. The groove receives the portion of the tape that extends between the groove and the edge of the tape, which portion does not extend outwardly from the face of the tape but rather lies below the level of the face of the tape.

The alignment means recited by Applicants in Claims 10, 11, 15, 18, and 19 includes a longitudinal groove extending into the body from one of the faces thereof and extending along the body parallel to the longitudinal axis thereof, and a matching longitudinal projection extending outwardly from the other of the faces of the body and extending along the body parallel to the longitudinal axis of the body “directly opposite said groove” (emphasis added). This disposition is recited in original claims and is supported by the original disclosure. Applicants’ claimed structure distinct from Drosthalm et al. not only in that it recites a groove extending into the body from one face and a projection extending outwardly from the other face, but also in that it recites that the projection is directly opposite the groove.

Applicants have amended Claims 9 and 17 to recite that the alignment means are disposed in directly opposed relation on the upper and lower faces of the body of the device, thereby clearly distinguishing those claims, and dependent claims under them, from any teaching of Drosthalm et al.

Applicants assert that they have demonstrated that Drosthalm, et al. does not disclose or teach the elements and/or features of Claims 7 - 20, and that, accordingly, one of ordinary skill in

the art would not have been taught or lead by Drosthholm et al. to have formed either the mechanical interlock means or the alignment means claimed by Applicants. Applicants believe, therefore, that Claims 7 - 20 are clearly patentable over the cited references.

In view of the foregoing, Applicants believe that all grounds for rejection under 35 U.S.C. 102(b) and under 35 U.S.C. 103(a) have been addressed and overcome, and that the allowability of Claims 1 through 25 has been clearly demonstrated. Applicants request that this amendment be entered; and that all claims pending in the application be allowed. No new matter is added to the application by the foregoing amendments to the claims, and no additional filing fee is seen to be due.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ronald B. Sefrna", is written over a horizontal line.

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Commissioner For Patents  
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In Re Application Of:  
James M. Souza, Glen Davis,  
and Billy H. Davidson

Serial No.: 09/594,621

Filed: June 15, 2000

For: COMPOSITE STRUCTURAL  
REINFORCEMENT DEVICE

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Art Unit: 1771

Examiner:  
Jennifer A. Boyd

Attorney Docket  
No.: 00PAT16

**MARKED-UP VERSION OF AMENDED CLAIMS  
ACCOMPANYING FIRST AMENDMENT**

The following is a marked-up version of claims of the identified application that have been amended in the First Amendment, which this document accompanies. A “clean” version of the amended claims is presented in the First Amendment. In the following claims, deletions (if any) are indicated by bracketing, and additions are indicated by underlining.

AMENDED CLAIMS

7. (Amended) The composite structural reinforcement device of Claim 1, further comprising interlock means formed on said upper face and said lower face of said body for the purpose of forming a mechanical interlock between said faces during application of the device to a structural member so as to resist longitudinal movement of said faces relative to each other.

9. (Amended) The composite structural reinforcement device of Claim 1, further comprising alignment means disposed in directly opposed relation on said upper and lower faces of said body for the purpose of aligning successive layers of the device during application of the device to a structural member.

12. (Amended) A composite structural reinforcement device to be applied to a structural member in a plurality of overlying layers, comprising

a continuous elongate body formed of high tensile strength material impregnated with a curable resin, said body having a longitudinal axis, having an upper face and a lower face, and having first and second edges; and

interlock means formed on said upper face and said lower face of said body for the purpose of forming a mechanical interlock between said faces during application of the device to a structural member so as to resist longitudinal movement of said faces relative to each other.

17. (Amended) A composite structural reinforcement device to be applied to a structural member in a plurality of overlying layers, comprising

a continuous elongate body formed of high tensile strength material impregnated with a curable resin, said body having a longitudinal axis, having an upper face and a lower face, and having first and second edges; and

alignment means formed in directly opposed relation on said upper face and said lower face of said body for the purpose of aligning successive layers of the device during application of the device to a structural member.

The foregoing marked-up version of the amended claims is an accurate reflection of the changes made to the claims as presented in rewritten form in the accompanying First Amendment.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ronald B. Sefrna", is written over a horizontal line.

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